

The Interdependence Hypothesis

Jigsaw Reading B1

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How Knowledge of First Language (L1) Affects Second Language (L2) Acquisition

In linguistic communities all over the world, literate and non-literate, children at the age of four have developed the essentials of basic interpersonal communication. That is, their pronunciation system is approaching that of an adult speaker, their word formation skills are essentially developed, they have a conversational vocabulary of between one and two thousand word families, their basic abilities with conversational sentence structure are nearing those of adult speakers, and they have developed the basic discourse skills which serve as a foundation for social interaction. All of this has happened before they have fully reached Piaget's concrete operations stage of mental development; that is, before they have developed the intellectual ability to reason as adults do. It has happened before they are capable of discussing language structure, and before they have developed literacy. As a matter of fact, the development of basic conversational skills in a language is not a good indicator of intellectual ability, except in cases of severe disabilities. Neither is the development of BICS a good predictor of academic success. All normal native speakers, even those at the lower end of the curve on standardized academic tests generally have good conversational ability in their language.

On the other hand, there is a strong correlation between academic success and vocabulary development, use of academic discourse, metalinguistic skills and levels of literacy, all of which are a part of CALP and continue to grow throughout childhood and adolescence. It is estimated, for example, that native speakers, on average, learn about 3,000 new word families per year during their elementary and secondary school years. Along with this vocabulary, they learn thousands of concepts in math, science, social studies, and other subjects. In addition, they become better and better readers and writers and develop analytical skills and complex higher-order thinking skills.

So, in addition to developing BICS, the absence of which can act as a temporary bottleneck to the processing of content information, L2 learners have to develop the CALP skills that native speakers are developing from year to year. It should not be surprising then, that in second language development, children immersed in L2 environments, develop BICS to near-native levels in one to three years, while it takes them from five to ten years on average to catch up to native speakers in CALP.

Also, since BICS is acquired primarily through social interaction and it is used primarily in face to face communication and does not place great demands on cognitive resources, children of many different intellectual and academic abilities acquire it in about the same amount of time given similar learning conditions. On the other hand, there are great differences among individuals in their rate of acquisition of CALP. This is where the Interdependence (IH) or Common Underlying Proficiency

(CUP) Hypothesis comes in.

Interdependence Hypothesis (Cummins, 1981)

Cognitive academic proficiency in the L1 and L2 are interdependent. Increases in the capacity for cognitive activity in one language also enhances the same capacity in the other. Consequently, learners who develop more cognitive skills through the use of their native language before beginning the acquisition of the L2 will develop the ability to manifest those skills in the L2 more rapidly than those who have not.

Simply put, it means that concepts developed in the L1 do not have to be relearned when children learn a second language; if children are already literate in their L1 when they are introduced to the L2, they will learn to read more rapidly in the second language; or children who have a strong background in math in the L1 will be able to use those skills when they continue to learn math in the L2. What this means in practical terms is that time spent in learning academic content and literacy in the native language is not time lost to educational achievement in the L2. While these claims seem self-evident to people who have worked with second language learners, this hypothesis has been hotly contested by those who are against native-language instruction in American schools. Because of this many studies have been conducted to test this hypothesis. Here we will review only a few of the most important.

An early study that prompted a lot of later research was done by Skutnabb-Kangas (1977). In it she examined the educational performance of Finnish immigrant children in Sweden. When she compared the performance of Finnish speaking children who began studying in Swedish schools in kindergarten with those who had studied in Finnish schools for up to two years before being immersed in Swedish, to her surprise, those who had entered later performed better on academic content measures in Swedish. This is the opposite of what one would predict if language fluency (BICS) were the only factor operating. That is, one would predict that the earlier the exposure to the second language, the better for academic performance in that language.

In a similar study by Gonzalez (1986, 1989) he examined the sixth grade reading skills of two groups of learners, one who attended school for at least two years in Mexico prior to entering school in the U.S. (34 students) and the other group who were Spanish speakers but were born and schooled entirely in the U.S. (36 students). Both were from similar low SES backgrounds. The group with prior education in Mexico outperformed the other group in both Spanish and English reading, while the U.S. born group outperformed the Mexico group in basic oral communication skills in English.

In 1985 the California State Department of Education conducted an evaluation of five schools in which children had been taught initial literacy in their L1. They found consistently higher correlations between English and Spanish reading scores ($r = 0.60$ to 0.74) in later grades than between English reading and English oral proficiency scores ($r = 0.36$ to 0.59). They also found that the correlations between L1 and L2 reading scores became stronger as oral language proficiency increased.

Cummins (1991) reviews a number of additional studies which support the Interdependence Hypothesis for both reading and writing skills, for languages which are closely related (English-Spanish) as well as languages that are linguistically more distantly related (Japanese-English). He concludes that the relationships between skills across similar languages are stronger than those across more distantly related ones. He attributes this to the fact that for distantly related languages,

transfer occurs primarily from cognitive and personality attributes of learners, whereas for more closely related languages, the transfer includes that of linguistic elements as well.

Cummins' interdependency hypothesis and the research which supports it provide clear evidence that the development of literacy in a first language will support the development of literacy in a second. Becoming literate in their native language will support second language learners' academic language development, as well as their skills in social interaction.

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